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EXAMINER

JARRETT, SCOTT L

ART UNIT	PAPER NUMBER
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3623

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,088

Applicant(s)

CHAPPEL ET AL.

Examiner

Scott L. Jarrett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/19/2002.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because Figures 1-10 are informal and/or illegible. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

2. Claims 1-10 and 20-32 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

- (1) whether the invention is within the technological arts; and
- (2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts. Additionally, for a claimed

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invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result.

Additionally, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result.

Regarding Claims 1-10, Claims 1-10 only recite an abstract idea. The recited method for determining the interdependencies between project team members does not apply, involve, use, or advance the technological arts since all of the recited steps can be performed in the mind of the user or by use of a pencil and paper. The claimed invention, as a whole, is not within the technological art as explained above therefore claims 1-10 are deemed to be directed to non-statutory subject matter.

Regarding Claims 20-32, Claims 20-32 only recite an abstract idea. The recited method for analyzing an interdependency relationship between two persons does not apply, involve, use, or advance the technological arts since all of the recited steps can be performed in the mind of the user or by use of a pencil and paper. The claimed invention, as a whole, is not within the technological art as explained above therefore claims 20-32 are deemed to be directed to non-statutory subject matter.

Mere intended or nominal use of a component, albeit within the technological arts, does not confer statutory subject matter to an otherwise abstract idea if the component does not apply, involve, use, or advance the underlying process. In the present case, none of the recited steps are directed to anything in the technological arts

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as explained above with the exception of the recitation of the terms "network" in claim 20 and "local area network", "a wide area network" and "Internet" in Claim 27.

Therefore, the terms discussed are taken to merely recite a field of use and/or nominal recitation of technology.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-23 and 25-33 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Puittinen, Rainer and Hameri, Ari-Pekka (herein after Puittinen et al.), Measuring and Visualizing information transfer in networked collaboration (1999).

Regarding Claims 1, 11 and 33 Puittinen et al. teach a method and system for measuring, analyzing and visualizing the relationships between a plurality of project team members based on the team member's project artifact (document) usage wherein the team member interdependencies information (relationships, social networks, graphs, etc.) provides project managers and team members with "...unique view on how the organization is performing and how its efficiency can be improved." (Summary, Page 1; Figures 1, 3 and 5).

More specifically Puittinen et al. teach a method and system for determining/analyzing interdependencies (relationships, links, associations, etc.) between project members working on a development project comprising:

- receiving (collecting, acquiring, etc.) data/information indicative of a temporal relationship between two or more project members having modified at least one project

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artifact (document, code, etc.; Section 4.2 Log Management, Page 92; Figure 1, "Log Management Layer", Figure 2; Figure 5, "Log Files");

- statistically analyzing the data indicative of the temporal relationship between the two project members (Section 3 The model, Pages 89-90; Paragraph 3, Page 95; Table 1);

- forming (determining, calculating, etc.) at least one metric (value, number, etc.) representative of the relationship (interdependency, associate, link, distance, etc.) between the two project members (e.g. document usage, communication; Paragraph 3, Page 86; Table I); and

- storing at least one metric (value, number, etc.) representative of the interdependency between the two project members (Paragraph 6, Page 87; Figure 1, Database).

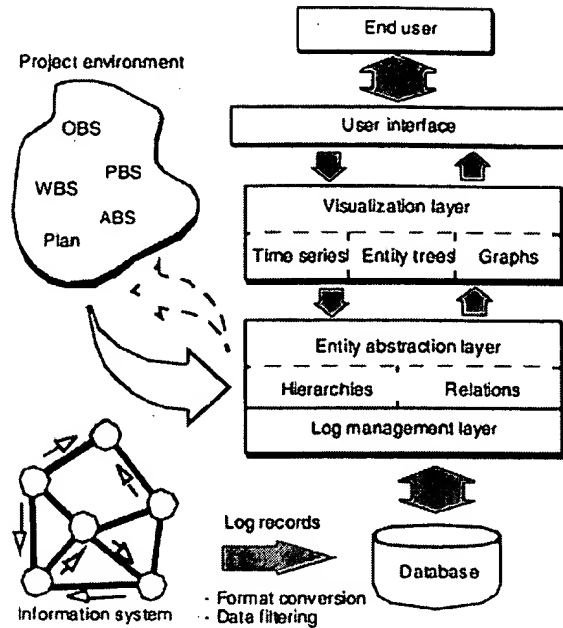


Figure 1. System model, where O = organizational, P = product, W = work, A = assembly and BS = breakdown structure of the concerned project

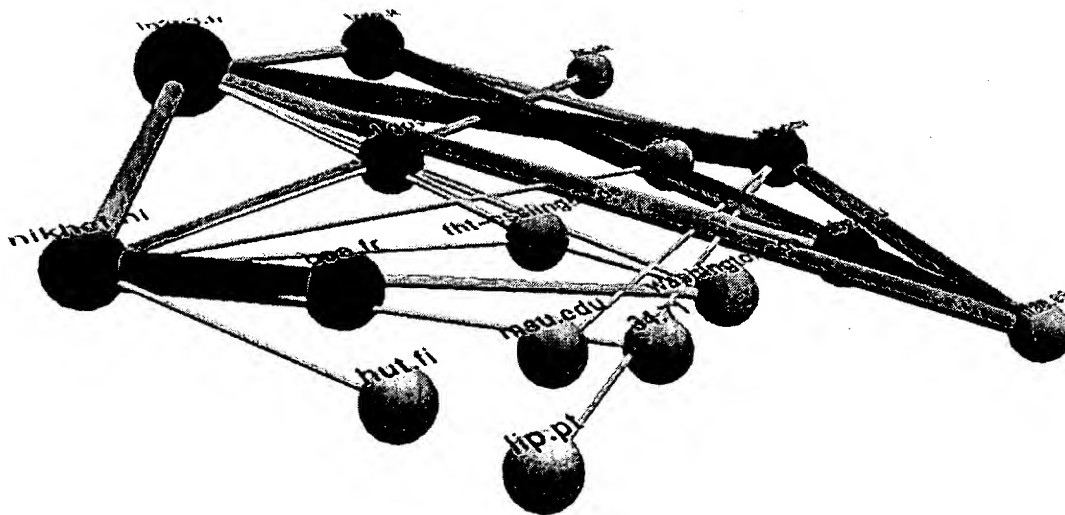


Figure 3. Java applet visualizing the communication network in three-dimensions

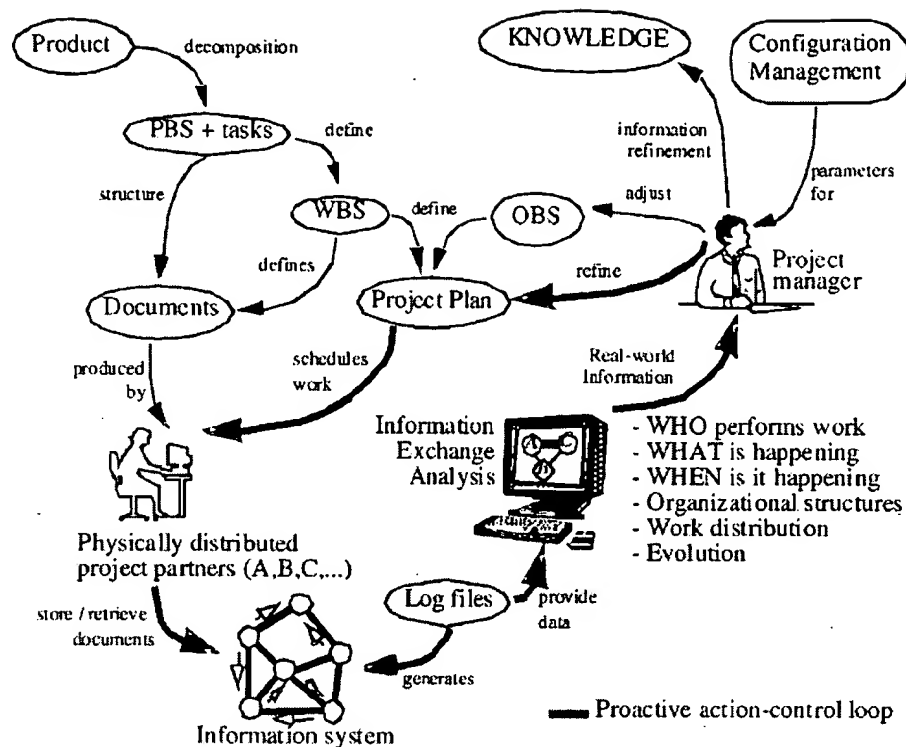


Figure 5. Information exchange analysis as part of the action-control loop (for abbreviations see Figure 1)

Regarding Claims 2 and 12 Puittinen et al. teach that the system and method for determining interdependencies between project members further comprises collecting (receiving, acquiring, etc.) data indicative of modifying (updating, revision, etc.) at least one project artifact by the two project members, wherein the data includes a time-stamp (“...document usage is a metric for information exchange.”, Paragraph 5, Page 86; Section 4.2 Log Management, Page 92; Step 3, Page 88).

Regarding Claims 3 and 13 Puittinen et al. teach a system and method for determining interdependencies between project members wherein the artifact include at

least one data element (e.g. tile, description, size, author, etc.) and a data file (document, document properties; Steps 2-5, Page 88; Table II).

Regarding Claim 4 Puittinen et al. teach a system and method for determining interdependencies between project members wherein statistically analyzing includes performing a regression analysis (i.e. determining the association between a dependent variable and one or more independent variables; Page 88; Section 3 The model, Pages 89-90).

Regarding Claim 5 and 15 Puittinen et al. teach a system and method for determining interdependencies between project members wherein statistically analyzing includes performing a correlation to produce at least one correlation coefficient (value; Page 88; Section 3 The model, Pages 89-90; Table 1).

Regarding Claim 6 teach Puittinen et al. teach a system and method for determining interdependencies between project members wherein the interdependency relationship metric includes at least one of the following a correlation coefficient (Page 88; Section 3 The Model, Pages 89-90; Table I), slope and/or an intercept.

Regarding Claim 7 and 16 teach Puittinen et al. teach that the system and method for determining interdependencies between project members further comprising forming (determining, calculating, generating, etc.) and storing (saving) a series of

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interdependency relationship metrics between the two project members (Page 88; Section 3 The model, Pages 89-90; Tables I, II; Figures 1, 3, 5).

Regarding Claim 8 Puittinen et al. teach a system and method for determining interdependencies between project members wherein the series of interdependency relationship metrics between the two project members includes repeating at predetermined, random or pseudo-random time periods (e.g. continuously; Section 3 The model, Pages 89-90; Section 4.2 Log Management, Page 92).

Regarding Claims 9 and 17-18 Puittinen et al. teach that the system and method for determining interdependencies between project members further comprising displaying (graphically) the series of metrics (Section 4.4 Visualization, Pages 92-93; Figure 2; Table II).

Regarding Claims 10 and 19 Puittinen et al. teach that the system and method for determining interdependencies between project members further comprising generating a human legible alphanumeric description of the at least one interdependency metric to describe the strength of the interdependency relationship between the two project members (Section 5 Use the system, Pages 93-95; Table I).

Regarding Claim 14 Puittinen et al. teach that the system and method for determining interdependencies between project members wherein statistically analyzing

includes performing a regression analysis and a correlation (Page 88; Section 3 The model, Pages 89-90).

Regarding Claim 20 Puittinen et al. teach a system and method for determining interdependencies between project members a method and system for analyzing an interdependency relationship between two persons working on at least one artifact stored on a network comprising:

- tracking modifications to at least one artifact (document, code, deliverable, etc.; Section 4.2 Log Management, Page 92; Table II);
- storing parameters (values, variables, information, data, etc.) associated with the artifact modification (Section 4.2 Log Management, Page 92; Figure 1, Database);
- identifying artifact modifications with the person (individual, member, etc.) making the modifications (Section 4.2 Log Management, Page 92; Table II);
- statistically analyzing the artifact modification information (Section 3 The model Pages 89-90);
- generating (forming, calculating, determining, etc.) at least one interdependency relationship metric between the persons (Page 88; Section 3 The model Pages 89-90; Table I).

Regarding Claims 21 Puittinen et al. teach a system and method for determining interdependencies between project members wherein the artifact modification

parameters include time-stamps identifying times the artifact was modified (Paragraph 5, Page 86; Section 4.2 Log Management, Page 92; Step 3, Page 88; Table II).

Regarding Claim 22 Puittinen et al. teach a system and method for determining interdependencies between project members wherein the artifact is associated with a development project ("real world engineering project", Paragraph 5, Page 90; Paragraph 3, Page 97).

Regarding Claim 23 Puittinen et al. teach a system and method for determining interdependencies between project members wherein the parameters are stored in a table (Section 4.2 Log Management, Page 92; Figure 1, Database).

Regarding Claim 25 Puittinen et al. teach a system and method for determining interdependencies between project members wherein the table includes at least one key associated with each artifact (e.g. artifact/document ID; Steps 1-5, Pages 87-88; "indicies", Section 4.2 Log Management, Page 92).

Regarding Claim 26 Puittinen et al. teach a system and method for determining interdependencies between project members wherein at least one artifact includes at least one data object (parameter, value, property, etc.) and a data file (Steps 1-5, Pages 87-88; Section 4.2 Log Management, Page 92).

Regarding Claim 27 Puittinen et al. teach a system and method for determining interdependencies between project members wherein the network includes at least one of the following a local area network, a wide area network and the Internet (Section 4 System architecture, Pages 90-91; Figure 2; Table II).

Regarding Claim 28 Puittinen et al. teach a system and method for determining interdependencies between project members wherein statistically analyzing includes performing a regression analysis and a correlation (Page 88; Section 3 The model, Pages 89-90; Table I).

Regarding Claim 29 Puittinen et al. teach a system and method for determining interdependencies between project members wherein identifying artifact modifications with the person (individual, member, etc.) making the modifications includes counting the number of modifications made by each person to the artifact (Step 3, Page 95; Figure 1; Table II).

Regarding Claim 30 Puittinen et al. teach that the system and method for determining interdependencies between project members further comprising summing a number of artifact modifications modified by the first person and successive modified by the second person (Section 4.2 Log Management, Page 92; Paragraph 3, Page 95; Table II).

Regarding Claim 31 Puittinen et al. teach a system and method for determining interdependencies between project members wherein the identified artifact modifications with the person (individual, member, etc.) making the modifications are aggregated (summed, totaled, etc.) for artifacts of the same type (Steps 1-5; Pages 87-88; Section 4.4 Visualization, Pages 92-93; Table II).

Regarding Claim 32 Puittinen et al. teach a system and method for determining interdependencies between project members wherein the identified artifact modifications with the person (individual, member, etc.) making the modifications are determined on an individual artifact basis (Steps 1-5; Pages 87-88; Table II).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puittinen, Rainer and Hameri, Ari-Pekka (herein after Puittinen et al.), Measuring and Visualizing information transfer in networked collaboration (1999) as applied to claims 1-23 and 25-33 above and further in view of official notice.

Regarding Claim 24 Puittinen et al. teach a system and method for determining interdependencies between project members wherein the parameters are stored in a plurality of databases (tables) as discussed above.

Puittinen et al. does not expressly teach a system and method for determining interdependencies between project members wherein the parameters are stored in a hash table as claimed.

Official notice is taken that in computer science, a hash table is an associative array data structure that associates keys with values. The primary operation it supports efficiently is a lookup, where the hash table is given a key, an identifier for the information to be found such as a documents/artifact's ID, and asked to find the

corresponding value. The hash table works by transforming the key using a hash function into a hash, a number that the hash table uses to locate the desired value.

Hash tables are often used to implement associative arrays, sets and caches. Like arrays, hash tables can provide constant-time $O(1)$ lookup on average, regardless of the number of items in the table. However, the rare worst-case lookup time can be as bad as $O(n)$. Compared to other associative array data structures, hash tables are most useful when a large number of records of data are to be stored.

It would have been obvious to one skilled in the art at the time of the invention that the system and method for determining interdependencies between project members, with its collection of a large amount of log/document usage data, as taught by Puittinen et al. would have benefited from utilizing a hash table to efficiently store and access the large amounts of data being collected in view of the teachings of official notice; the resultant system providing for consistent data access times despite large increases in the volume of log data collected.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hambrick et al., U.S. Patent No. 5,671,360, teach an artifact (work product) centric project management system and method for assigning and managing project tasks/activities related to project artifacts.

- Du et al., U.S. Patent No. 5,826,239, teach resource management in a workflow system. Du et al. further teach that the utilization of workflow process management systems (WFPM) is old and well known as is WFPM systems' statistical analysis of collected data (e.g. historical data, audit trail) for the purposes of improving the workflow processes.

- Fiszman et al., U.S. Patent No. 6,115,646, teach a workflow management system and method. Fiszman et al. further teach the commercial availability of a plurality of workflow products/systems.

- Ouchi, Norman, U.S. Patent No. 6,279,042, teach a document centric workflow management system and method wherein messages are utilized to coordinate/manage a plurality of interdependent tasks/activities related to a document.

- Agrawal et al., U.S. Patent No. 6,278,977, teach a system and method for generating process models (maps) utilizing audit trails (history, collected data, log data) of all workflow activities including identifying the activity, execution interval (start/end time) and the like.

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- Bacon et al., U.S. Patent No. 6,430,538, teach an Internet-based method and system for managing workflows wherein personal/dynamic workflows can be created and managed during the use of the system (i.e. run-time) and that a plurality of information is stored in a database related to the activities (status, etc.) and work items (artifacts).

- Jones et al., U.S. Patent No. 6,493,731, teach a system for providing document management capabilities within a workflow system and method and that a plurality of document information, including such information as document usage (viewing history), document metadata (author, size, last updated, etc.), document's relevance to a particular task) and the like is collected recorded and reported on.

- Saito et al., U.S. Patent No. 6,578,006, teach a project management (work management) system and method.

- Stickler, Patrick, U.S. Patent No. 6,904,454, teaches a document management system and method wherein the system provides project artifact (document) versioning and routing/workflow sequencing. Stickler further teaches that a plurality of data (metadata) is associated with documents stored in a central repository.

- Leymann et al., U.S. Patent Publication No. 2002/0077945, teach a workflow management system wherein a plurality of audit trails ("all relevant data about a particular event in the life of a process or activity") are generated and analyzed to determine potential process/project improvements.

- Hameri et al., Spin-offs from CERN and the Case of TuoviWDM, teach the development of a web based data management system and method, developed in as

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the result of research conducted at CERN in the 1980s-1990s, wherein the system determines and visualizes the interdependencies between project members on a development project (communication patterns, document usage, etc.) for project management purposes.

- Hameri et al., Improved project management through improved document management, teach a system and method for determining and visualizing the interdependencies between project team members based on the tracking and analysis of a common set of document based operations for project management purposes (CERN Tuovi; "document flows reveal who actually uses and produces information"). Hameri et al. further teach that documents comprise metadata (author, usage history, status, etc.) and data (the contents of the documents).

- Hameri et al., Distributed New Product Development Project Based on Internet and World-Wide Web, teach a system and method for analyzing and visualizing the interdependencies between project team members on a product development project based on the collection and analysis of document usage (e.g. file transfer activities) as part product development efforts at CERN.

- Hameri, Ari-Pekka, Project management in a long-term and global one-of-a kind project, teaches that one of the key causes of failures for projects is "ignorance of what other project teams are doing." Hameri further teaches the development of a system and method to measure and analyze the communications between project team members in order to enable project managers to follow the progress of the project, anticipate future project risks, increase resource efficiencies and the like.

- Amami, Mokhtar et al., Project Management and Communication of Product Development Through Electronic Document Management, teach a document/artifact centric project management methodology that utilizes electronic document management systems to improve the project management and communications for projects.

- Krackhardt, David, Social Networks and the Liability of Newness for Managers, teaches the application of old and well known methods for determining the interdependencies (relationships, links, associations, etc.) between people (e.g. social network analysis) to understanding the impact these interdependencies have on new managers and their staff.

- Morelli et al., Predicting Technical Communication in Product Development Organizations, teach the importance of understanding the communication/relationships between project team members wherein Morelli et al. compare predicted and actual project team interdependencies in order understand to what extent team communications/associations can be predicted.

- Katz, Ralph, Communication Patterns, Project Performance and Task Characteristics (abstract), teach the impact of communication patterns on project performance.

- Krackhardt, David, Informal networks (abstract), teach that informal networks (social network, team member interdependencies) "are critical to accomplishing tasks" and that three types of informal networks exist (advice, trust and communication).

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- Wasserman et al., Social Network Analysis, teaches a plurality of well-known tools, methods, techniques and approaches to determining (modeling, analyzing, determining, etc.) the interdependencies between individuals (social networks).

- Vouikoski, Mikko, Making intercorporate project communications work, teaches the commercial availability of an Internet-based system (KronDoc, Tuovi) for determining and analyzing team member interdependencies for the purposes of project management. Vouikoski further teaches that the first version of this product was available at CERN in 1996 (CERN EDMSWeb) and commercially available in 1999.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott L. Jarrett whose telephone number is (571) 272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hafiz Tariq can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


SJ

7/28/2005


SUSANNA M. DIAZ
PRIMARY EXAMINER

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